

IN THE U.S. PATENT AND TRADEMARK OFFICE

APPELLANTS: John A. Dispenza et al. Confirmation No.: 5477
APPL. NO.: 10/029,461 Group No.: 1793
FILED: December 21, 2001 Examiner: Kuang Y. Lin
FOR: HEAT EXCHANGING APPARATUS AND METHOD OF
MANUFACTURE
Attorney Docket: 129250-001049/US

APPELLANTS' REPLY BRIEF ON APPEAL

MAIL STOP APPEAL BRIEF - PATENTS

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ARGUMENTS:

A. The 35 U.S.C. §103 Rejections

(1) claims 1-4, 6-8 and 19

In the Appellants' opening brief the Appellants took the position that neither Miki nor Bradley, taken separately or in combination, disclose or suggest the feature of cooling a heated metal slurry to form a contact area that provides a substantially continuous void free interface between the core object and fins when hardened for effective heat transfer across a contact area, as in claim 1.

In the Examiner's Answer the Examiner first states (page 7, lines 3-4) that the resulting combination of Miki and Bradley "is the same as that of instant process" without providing any proof of such a statement.

Later on, however, upon considering the phrase "substantially continuous void free interface" the Examiner acknowledges (page 7, lines 18-20) that the process in Miki "is somewhat different from that of instant process". Nonetheless, the Examiner states, without providing any proof, that the "product of modified process of Miki is still considered the same or substantially the same as that of instant application" and that the combination of Miki and Bradley "would also form a heat exchanger with almost all the air voids....being removed" (page 8, lines 6-7).

As the Board knows well, such bare statements without factual support, are mere speculation; such speculation cannot provide a basis for sustaining the Examiner's obviousness rejections.

In contrast, the only evidence of cooling a heated metal slurry to form a contact area that provides a substantially continuous void free interface between a core object and fins when hardened for effective heat transfer across a contact area is that provided by the specification and claims of the present invention. The Appellants reiterate that "even an artisan possessing creativity

and common sense, and having knowledge of" methods of injecting semi-solid slurries into a casting die would not have reasonably combined Miki and Bradley "in the manner suggested by the Examiner, but for having the benefit of the instant claims to impermissibly use as a guide" (paraphrasing *Ex parte* Armitage, Appeal No. 2008-004803, decided September 4, 2009, page 10).

In their opening brief the Appellants also took the position that due to the known, markedly different chemical and physical properties between a semi-solid and a liquid metal one of ordinary skill in the art would not expect that combining Bradley and Miki would result in the formation of a contact area that provides a substantially continuous void free interface between a core object and fins. The Appellants provided a detailed explanation for such a rationale.

In rebuttal, the Examiner states that the "applicant failed to disclose in the specification what operation principle would be changed by what properties and in what manner or how...".

It is respectfully submitted that the Examiner's focus is misplaced. There is no requirement for the Appellants to point out where in the specification there is proof that the combination of Miki and Bradley is impermissible. To the contrary, what is required, and what the Appellants provided in their opening brief, is a detailed and sufficient explanation of why the combination of Miki and Bradley is impermissible based on the disclosures of Miki and Bradley.

Perhaps realizing the weakness of the PTO's position, the Examiner additionally argues that "those of ordinary skill in the foundry art [would] manipulate the process parameters to optimize the solidification process" in order to, presumably, solve the incompatibility problems raised by combining Miki and Bradley. Again, however, the Examiner does not provide any factual support for such a statement. Further, because the "manipulations" required

are left undefined by the Examiner the Examiner's position is highly speculative, and, therefore, cannot sustain the obviousness rejections.

Indeed, such additional manipulations over and above the disclosures set forth in Miki and Bradley support the Appellants position that it is doubtful that even one of *extraordinary* skill in the art would have expected the combination of Miki and Bradley to result in the claimed invention.

(2) claims 9-12, 14-16 and 20

In their opening brief the Appellants stated that because the '944 reference is in the Japanese language it is not possible for the Appellants to determine at this time whether the combination of the '944 reference, Miki and Bradley is permissible, i.e., whether such a combination of references would render one or more of the references unsatisfactory for its intended purpose or impermissibly require one or more of the references to change their principle of operation.

The Examiner has now kindly provided the Appellants with a translation of the '944 reference.

From a reading of the '944 reference it is clear that like Bradley, the '944 reference is incompatible with the process in Miki (for example, compare the temperatures stated in the translation of the '944 reference, paragraph (0019) on page 10, with the temperatures set forth in Table 1, column 7 of Miki).

Though the Examiner again states that the '944 reference "is cited simply to show that it is conventional to use a caterpillar type continuous casting machine for continuous casting metallic article, in lieu of conventional batch-wise casting process, to speed up output" this does not overcome the incompatibility issues that render the combination of Miki, Bradley and the '944 reference impermissible.

Conclusion:

Appellants respectfully request that members of the Board reverse the decision of the Examiner and allow claims 1-4, 6-12, 14-16, 19 and 20.

The Commissioner is authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 50-3777 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17; particularly, extension of time fees.

Respectfully submitted,
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